REMARKS

Summary

Claims 1-10 and 17-36 were pending. Claims 1-8, 17, 19, 20 and 24-27 were rejected and Claims 9, 10, 18, 21-23 and 28-36 were objected to in the present Office action. Claims 17, 20, 21, 24-27 and 29 have been amended; Claims 18 and 28 have been cancelled. No new matter has been added. The Applicants respectfully request reconsideration of the rejections.

Oath/Declaration

A supplemental declaration is appended hererto, identifying the entire inventive entity and being signed and dated by Mr. Jae Moon JUNG.

Title

The Examiner has required a change to the title of the invention under MPEP § 606.01. The Applicant believes that the present title is representative of the scope of the invention, but invites a suggestion for an amended title by the Examiner.

Claim Rejections

35 U.S.C. § 102 (b)

Claims 1 and 3-8 were rejected under 35 U.S.C. § 102 (b) as being anticipated by Lee (US2002/0163602; now US 6,833,882; "Lee"). The Applicants respectfully traverse the rejection on the basis that a *prima facie* case of anticipation has not been made out.

Claim 1 recites, *inter alia*, a gate line arranged in one direction on the substrate and having a predetermined portion bent angularly and inwardly, and a data line overlapping some of the bent portion of the gate line, the data line perpendicular to the gate line to define a pixel region.

The Examiner identifies the gate line [32] shown in Fig. 3 of Lee as having a portion "bent angularly and inwardly [on the bottom, the region not marked "S"...." and asserts that data line [34] is "overlapping some of the bent portion of the gate line". Also identified are a gate electrode [36] projecting from the gate

line, and a source electrode [38] projecting from the data line. The area "S" is taught to be a storage capacitor, and the gate line [32] is taught to be a terminal of the storage capacitor. (col. 7, lines 49-51). Predominantly, therefore, the shape of the gate line [32] is defined by that aspect associated with the call out [32] in Fig. 3 of Lee. At the left hand side of the capacitor, the gate line bends angularly outward from the gate line to form a plate of the capacitor "S". On the side of the gate line [32] opposing the angular bend, the gate electrode [36] is formed. The data line [34] and the gate line [32] intersect perpendicularly at the left hand edge of the figure.

This is not the arrangement of Claim 1, where the data line is bent angularly and inwardly, and the data line overlaps some of the bent portion of the gate line. Since Lee does not teach each element of the present Claim 1, and the arrangement thereof, the claim is not anticipated, and is therefore allowable.

Claims 2-7 are claims dependent on allowable Claim 1, and are allowable, without more. Claim 8 recites subject matter similar to that discussed above, and the claim is allowable for the same reasons. Claims 9 and 10 are claims dependent on allowable Claim 8, and are allowable, without more.

Claim 17 was rejected under 35 U.S.C. § 102 (b) as being anticipated by Kang (US 6,900,872; "Kang"). The Applicants respectfully traverse this rejection on the basis that that a *prima facie* case of anticipation has not been made out.

Claim 17 recites, *inter alia*, a boundary of a second side of the gate line opposing the first side, and disposed in a portion of the gate line that overlaps the data line, is greater than a width of the data line.

The Examiner identifies a gate electrode wherein "the boundary of a second side [the lower side], disposed overlapping the data line, is greater than a width of the data line [due to bending]" (Office action, page 4. second from last paragraph of item 5.).

With respect to Fig. 5 of Kang, the structure described by the Examiner is not identified by a numerical indication, however, for the purposes of this traverse only, the structure is presumed to be the two deviations in the lower boundary of

the structure identified as 102, occurring in the vicinity of the crossing of the structure identified as 133. The deviations appear to each be approximately symmetrical with respect to each structure 133. However an inspection of the Fig. 5 does not reveal any curvature in the lower boundary of 102 between the limits of the structure 133. The Applicants respectfully suggest that a straight edge laid on the portion of the boundary of the gate line crossing the data line will demonstrate that the section illustrated as overlapping the data line in Kang is a straight line.

Since the line segment of the lower boundary of element 102 of Kang is both straight and perpendicular to the boundary of element 133 in the region where the lower boundary of element 102 overlaps element 133, the length of the lower boundary of element 102 in this region is equal to the width of the element 133. This differs from the arrangement of Claim 17, where the boundary of the gate line is greater than a width of the data line. For at least this reason, Claim 17 is not anticipated, and is allowable.

Claims 18-26, being claims dependent on allowable Claim 17, are allowable, without more.

35 U.S.C. § 103 (a)

Claims 17, 19, 20, and 24-26 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Ko et al. (US 6,285,418; "Ko"), in view of Dohjo et al. (US 6, 078, 366; "Dohjo"). The Applicants believe that adequate grounds for traversing this rejection exist, however Claim 17 has been amended to clarify the subject matter claimed, resulting in the cancellation of Claim 19.

Amended Claim 17 recites, *inter alia*, a notch is formed in a boundary of a second side of the gate line opposing the first side, and disposed between an edge of the gate electrode and an edge of the data line, such that a length of the boundary where a portion the notch overlaps the data line, is greater than a width of the data line.

The Examiner has identified a "notch" in the gate line illustrated in Fig. 3 of Ko. However, the Applicants are unsure of which portion of the gate line is being referred to. These remarks will address both possibilities. Further, for purposes of this discussion only, the Applicants will accept the Examiner's assertion that "the slant in the gate line is inaccurately omitted on the left of Fig. 3". (Office action. page 6, lines 2-3)

There appear to be two possible locations for a "notch" as identified by the Examiner. The first location comprises the portion on the gate line 27 extending from a point on the right hand side of Fig. 3 where the lower boundary of the line deviates at a slant and then crosses the left hand boundary of the data line and enters the hatched area 38. At the left hand edge of the element 38, the boundary of the gate line slants at an angle opposite to the original slant so that the gate line boundary returns to be collinear with the original line. The second location comprises the portion of the gate line where the lower boundary of the gate line exits the left hand edge of the element 39, and runs to cross the boundary of the left hand data line 25L. Within the left hand data line 25L, the boundary of the gate line slants in the opposite direction to the direction of slant of the boundary line at the left hand side of element 38, returning the gate line boundary to a collinear position with respect to the gate line boundary in the cross hatched region.

Neither of these "notches" is disposed between an edge of the gate electrode and an edge of the data line, as in the arrangement of amended Claim 17. Hence, the combination of the references does not teach or suggest all of the elements of the present Claim 17, and the claim is allowable.

Claims 20, 21 and 24-26, being claims dependent on an allowable claim are allowable, without more.

Claims 1-3 and 6 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Kim et al. (Korean Patent Document No. P1999-0074559; "Kim") in view of Dohjo. The Applicants respectfully traverse this rejection on the basis that a *prima facie* case of obviousness has not been made out.

Claim 1 recites, *inter alia*, a gate line arranged in one direction on the substrate and having a predetermined portion bent angularly and inwardly.

The Examiner asserts that the gate line [2] of Kim has a portion bent angularly and inwardly "(alternating parts of wavy region)". The conventional meaning of the word "angular" is "forming an angle: sharp cornered" (Merriam-Webster's Collegiate Dictionary, Tenth Edition, 2002, attached citation), whereas the portion of the gate line [2] shown in Fig. 3 as overlapping the data line would be termed "sinuous" or "of a serpentine or wave form" (citation attached). As such, the reference does not teach or suggest all of the limitations of the present Claim 1, where the gate line has a predetermined portion bent angularly. The secondary reference, Dohjo, is not cited to remedy this deficiency, and thus a *prima facie* case of obviousness has not been made out, and Claim 1 is allowable.

Claims 2, 3, and 6 are claims dependent on an allowable claim and are allowable, without more.

Claim 27 was rejected under 35 U.S.C. § 103 (a) as being unpatentable over Morita et al. (US 6,897,482; "Morita") in view of Dohjo.

Claim 27 has been amended to incorporate the subject matter of Claim 28, which was objected to as being dependent on a rejected base claim, but otherwise itself allowable. As such the rejection of Claim 27 is moot. Claim 28 has been cancelled and claims dependent thereon amended to correct the referencing of claims.

Claim Objections

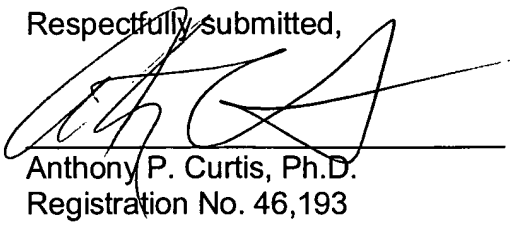
Claims 9, 10, 18, 21-23 and 28-36 were objected to as being dependent on a rejected base claim, but the Examiner indicated that the claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Applicants express appreciation to the Examiner for the prompt indication of allowable subject matter. Claim 28 has been cancelled and the subject matter of the claim incorporated into Claim 27 upon which it had depended. Claim 27 is now allowable. With respect to the other claims objected to, the Applicants respectfully submit that the amendments and arguments made above render the base claims allowable, and the objections have become moot.

Conclusion

Claims 1-18, 20-27 and 29-36 are pending. In view of the amendments herein and for at least the reasons presented above, the Applicants respectfully request that the rejections and objections be withdrawn, and that a timely notice of allowance issue.

The Examiner is respectfully requested to contact the undersigned in the event that a telephone interview would expedite consideration of the application.

Respectfully submitted,



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